BHARATHIDASAN UNIVERSITY TIRUCHIRAPPALLI-620 024.

B.Sc. DATA SCIENCE

CHOICE BASED CREDIT SYSTEM –

LEARNING OUTCOMES BASED CURRICULUM FRAMEWORK (CBCS - LOCF)

(Applicable to the candidates admitted from the academic year 2022-2023 onwards)

(Naan Mudhalvan scheme has been implemented from 2nd to 4th semester for the 2023-2024 Batch)

Sem.	Part	Course	Title	Ins. Hrs	Credit	Exam Hours	Marks Int.	Marks Ext.	Total
I	I	Language Course – I Tamil $ / Other Languages + #		6	3	3	25	75	100
	II	English Course - I		6	3	3	25	75	100
	III	Core Course – I (CC)	Programming in C and Data Structures	5	5	3	25	75	100
		Core Practical – I (CP)	Programming in C Lab	4	4	3	40	60	100
		First Allied Course – I (AC)		4	4	3	25	75	100
		First Allied Practical (AP)		3	-	-	-	-	-
	IV	Value Education		2	2	3	25	75	100
		TOTAL		**30**	**21**	**-**	**-**	**-**	**600**
II	I	Language Course - II Tamil $ / Other Languages + #		6	3	3	25	75	100
	II	English Course - II		4	3	3	25	75	100
	III	Core Course – II (CC)	Python Programming	5	5	3	25	75	100
		Core Practical – II (CP)	Python Programming – Lab	4	4	3	40	60	100
		First Allied Practical (AP)		3	2	3	40	60	100
		First Allied Course – II (AC)		4	4	3	25	75	100
		Add on Course – I ##	Professional English I	6*	4	3	25	75	100
	IV	Environmental Studies		2	2	3	25	75	100
	VI	Naan Mudhalvan Scheme (NMS) @@	Language Proficiency for Employability - Overview of English Language Communication	2	2	3	25	75	100
		TOTAL		**30**	**29**	**-**	**-**	**-**	**900**

III	I	Language Course – III Tamil $ / Other Languages + #		6	3	3	25	75	100
	II	English Course - III		6	3	3	25	75	100
	III	Core Course – III (CC)	Database Systems	5	5	3	25	75	100
		Core Practical - III (CP)	Database Systems Lab	4	4	3	40	60	100
		Second Allied Course – I (AC)		4	4	3	25	75	100
		Second Allied Practical (AP)		3	-	-	-	-	-
		Add on Course – II ##	Professional English II	6*	4	3	25	75	100
	IV	Non-Major Elective I @ - Those who choose Tamil in Part I can choose a non-major elective course offered by other departments. Those who do not choose Tamil in Part I must choose either a) Basic Tamil if Tamil language was not studied in school level **or** b) Special Tamil if Tamil language was studied upto 10th & 12th std.		2	2	3	25	75	100
	VI	Naan Mudhalvan Scheme (NMS) @@	Digital Skills for Employability – Microsoft Digital Skills	-	2	3	25	75	100
	TOTAL			**30**	**27**	**-**	**-**	**-**	**800**
IV	I	Language Course –IV Tamil $ / Other Languages + #		6	3	3	25	75	100
	II	English Course – IV		6	3	3	25	75	100
	III	Core Course - IV (CC)	Big Data Analytics with NoSQU Database	5	5	3	25	75	100
		Core Practical - IV (CP)	Big Data Analytics Lab	4	4	3	40	60	100
		Second Allied Practical (AP)		3	2	3	40	60	100
		Second Allied Course – II (AC)		4	4	3	25	75	100
	IV	Non-Major Elective II Those who choose Tamil in Part I can choose a non-major elective course offered by other departments. Those who do not choose Tamil in Part I must choose either a) Basic Tamil if Tamil language was not studied in school level or b) Special Tamil if Tamil language was studied upto 10th & 12th std.		2	2	3	25	75	100
	VI	Naan Mudhalvan Scheme (NMS) @@	Fundamentals of Web Development	-	2	3	25	75	100
	TOTAL			**30**	**25**	**-**	**-**	**-**	**800**

V	III	Core Course - V (CC)	Data Mining, Data Warehousing and Data Visualization	5	5	3	25	75	100
		Core Course – VI (CC)	Network Security	5	5	3	25	75	100
		Core Course – VII (CC)	Cloud Computing	5	5	3	25	75	100
		Core Practical -V (CP)	Data Mining, and Data Visualization Lab	4	4	3	40	60	100
		Major Based Elective – I (Any one)	1. Internet of Things 2. Block Chain Technology	5	4	3	25	75	100
	IV	Skill Based Elective I	Shell Programming	4	2	3	25	75	100
		Soft Skills Development		2	2	3	25	75	100
		TOTAL		**30**	**27**	**-**	**-**	**-**	**700**
VI	III	Core Course - VIII (CC)	R Programming	6	5	3	25	75	100
		Core Course - IX (CC)	Machine Learning	6	5	3	25	75	100
		Core Practical – VI (CP)	Machine Learning Lab	4	4	3	40	60	100
		Major Based Elective – II (Any one)	1. Computing Technologies for Data Science 2. Augmented Reality and Virtual Reality	5	4	3	25	75	100
		Project		4	3	-	20	80	100
	IV	Skill Based Elective – II	Web Technology	4	2	3	25	75	100
	V	Gender Studies		1	1	3	25	75	100
		Extension Activities **		-	1	-	-	-	-
		TOTAL		**30**	**25**	**-**	**-**	**-**	**700**
		GRAND TOTAL		**180**	**154**	**-**	**-**	**-**	**4500**

List of Allied Courses

First Allied Course	Second Allied Course
Mathematics	Statistics

$ For those who studied Tamil upto 10th +2 (Regular Stream).

+ Syllabus for other Languages should be on par with Tamil at degree level.

Those who studied Tamil upto 10th +2 but opt for other languages in degree level under Part- I should study special Tamil in Part – IV.

The Professional English – Four Streams Course is offered in the 2nd and 3rd Semester (only for 2022-2023 Batch) in all UG Courses. It will be taught apart from the Existing hours of teaching / additional hours of teaching (1 hour /day) as a 4 credit paper as an add on course on par with Major Paper and completion of the paper is must to continue his / her studies further. (As per G.O. No. 76, Higher Education (K2) Department dated: 18.07.2020).

* The Extra 6 hrs / cycle as per the G.O. 76/2020 will be utilized for the Add on Professional English Course.

@ NCC Course is one of the Choices in Non-Major Elective Course. Only the NCC cadets are eligible to choose this course. However, NCC Course is not a Compulsory Course for the NCC Cadets.

** Extension Activities shall be outside instruction hours.

@@ Naan Mudhalvan Scheme.

SUMMARY OF CURRICULUM STRUCTURE OF UG PROGRAMMES

Sl. No.	Part	Types of the Courses	No. of Courses	No. of Credits	Marks
1.	I	Language Courses	4	12	400
2.	II	English Courses	4	12	400
3.		Core Courses	8	40	800
4.		Core Practical	7	29	700
5.		Allied Courses I & II	4	16	400
6.	III	Allied Practical	2	4	200
7.		Major Based Elective Courses	2	8	200
8.		Add on Courses	2	8	200
9.		Project	1	3	100
10.		Non-Major Elective Courses (Practical)	2	4	200
11.		Skill Based Elective Courses	2	4	200
12.	IV	Soft Skills Development	1	2	100
13.		Value Education	1	2	100
14.		Environmental Studies	1	2	100
15.	V	Gender Studies	1	1	100
16.		Extension Activities	1	1	--
17.	VI	Naan Mudhalvan Scheme	3	6	300
		Total	**46**	**154**	**4500**

PROGRAMME OBJECTIVES:

- Graduates will be able to comprehend the basic concepts learnt and apply in real life situations with analytical skills.
- Graduates with acquired skills and enhanced knowledge will be employable / become entrepreneurs or will pursue higher Education.
- Graduates with acquired knowledge of modern software tools will be able to contribute effectively as data scientist.
- Graduates will be able to comprehend the related concepts to Data Science with Allied papers
- Graduates will be imbibed with ethical values and social concerns to ensure peaceful society.

PROGRAMME OUTCOMES:

After successful completion of B.Sc. Data Science programme the students will be able to

- Apply the computing knowledge to analyze real world applications.
- Solve the complex problems in the field of data science with an understanding of different types and formats of data
- Understand the concepts and ability to apply appropriate models.
- Develop programs and models for the various domain specific problems.
- The ability to exposure, identify and 3nalyse big data, adjust and adapt with the dynamic technical environment for the growth of IT industry.

*****